UNITED STATES PATENT AND TRADEMARK OFFICE

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/915,532	07/27/2001	Kouji Kita	0088/002001	9037

22893 7590 11/04/2004	EXAMINER
SMITH PATENT OFFICE	SHERALI, ISHRAT I

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ART UNIT	PAPER NUMBER
2621	

DATE MAILED: 11/04/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/915,532	KOUIJI KITA
	Examiner	Art Unit	
	Sherali Ishrat	2621	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.
- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1) ☐ Responsive to communication(s) filed on _____.
2a) ☐ This action is **FINAL**.   2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4) ☒ Claim(s) _1-22_ is/are pending in the application.
     4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) _1,8,9 and 14-22_ is/are rejected.
7) ☒ Claim(s) _2-7 and 10-13_ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
     a) ☐ All   b) ☐ Some * c) ☐ None of:
       1. ☐ Certified copies of the priority documents have been received.
       2. ☐ Certified copies of the priority documents have been received in Application No. _____.
       3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
     * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
     Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
     Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Drawings

1.   The drawings are objected to under 37CFR 1.83(a). The drawings must show

every feature of the invention specified in claims.   Therefore, the steps of the claimed

method must be shown. Drawing does not illustrates any steps of the claims 1-8.

No new matter should be entered.

Claim Rejections - 35 USC § 101

2.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

3.   Claims 14-21 are rejected under 35 USC 101 because claims recite

"A computer-executable image processing program, performing a process

of:".   Claiming computer-executable image processing program is non-statutory.

Examiner suggest claims should recite "A computer-readable medium, for recording an

image processing program, performing a process of:".   Examiner would like to point out

that claim 22, recites similar limitation, to avoid the double patenting, Applicant is

advised to cancel claim 22.

Claim Rejections - 35 USC § 103

4.   The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all

obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

5.   Claims 1, 8, 9, 14, 21 and 22 are rejected under 35 USC 103 as being unpatentable over Mackinnon et al. (US 6,148, 115) in view of Sathe et al. (US 6,021,216).

Regarding claim 1, 14, and 22 Mackinnon discloses image processing (Mckinnon, in col. 1, lines 7-10, states "image processing for reducing noise);

changing a rate of smoothing of the chromaticity data and rate smoothing of the luminosity data (Mckinnon in col. 14, lines 34-40, states "the resulting edge information is used to smooth luminance and color-difference information. The difference D between the weights of two neighboring pixel which determines the degree of smoothing and the size of the neighboring area N may be differently set, with those for the luminance and color-difference". In the system of Mackinnon this corresponds to changing a rate of smoothing of the chromaticity data [color-difference] and rate smoothing of the luminosity data),

according to the variation of the luminosity data in two-dimensional coordinate space (Mckinnon, in col. 14, lines 33-36, states "edge detection [variation] is made in luminance signal only and the resulting edge information is used to smooth luminance and color-difference information" and also Examiner notes that edge [variation of image pixel] is made up of image pixels which are always in two dimensional coordinate therefore in the system of Mckinnon this corresponds to according to the variation of the luminosity data in two-dimensional coordinate space).

Mackinnon have shown separate luminosity and chromaticity data (Mckinnon, col. 14, lines 34-36, Mckinnon is processing luminance and color difference signal [chromaticity]. Mckinnon however have not explicitly disclosed process of seprarating image data into luminosity and chromaticity data.

In the same field of endeavor Sathe discloses process of seprarating image data into luminosity and chromaticity data (Sathe, in col. 7, lines 4-8, "processor receives image data in RGB space and the processor transform RGB to YUV color space by separating the image signal into luminance and chrominance". In the system of Sathe this corresponds to process of seprarating image data into luminosity and chromaticity data).

Therefore it would have been obvious to one having ordinary skill in the art at time the invention was made to separate image data into luminosity and chromaticity data from RGB image data as shown by Sathe in the system of Mckinnon because such a process provides reduction of noise of the original RGB image data by independently processing luminosity [intensity] and chromaticity [color] image data.

Regarding claim 8 and 21 Mackinnon discloses the rate of the smoothing of chromaticity and the rate of smoothing of the luminosity data are changed according to a distribution parameter of luminosity data (Mckinnon, in col. 14, lines 33-36, states "edge detection [variation] is made in luminance signal only and the resulting edge information is used to smooth luminance and color-difference information [chrominance]". This corresponds to Mackinnon discloses the rate of the smoothing of

chromaticity and the rate of smoothing of the luminosity data are changed according to a distribution parameter of luminosity data [edge]).

Regarding claim 9, Mckinnon discloses image processing (Mckinnon, in col. 1, lines 7-10, states "image processing for reducing noise);

a chromaticity noise removing section for smoothing the chromaticity data (Mckinnon in figure 2, blocks 225 and 228 shows horizontal and vertical smoothing units, in col. 14, lines 29-35, states "The same process is performed on both luminance and color difference [chromaticity], edge detection is made in luminance and the resulting edge information is used to smooth both luminance and color difference". In the system of Mckinnon this corresponds to a chromaticity noise removing section for smoothing the chromaticity data);

a luminosity noise removing section for smoothing the luminosity data (Mckinnon in figure 2, blocks 225 and 228 shows horizontal and vertical smoothing units, in col. 14, lines 29-35, states "The same process is performed to both luminance and color difference [chromaticity], edge detection is made in luminance and the resulting edge information is used to smooth both luminance and color difference". In the system of Mckinnon this corresponds to a luminance noise removing section for smoothing the luminance data);

a smoothing rate computing section for computing a variation of luminosity data in two dimensional (Mckinnon, in figure 2, blocks 221, 222 and 224 smoothing rate computing section and in col. 14, lines 33-36, states "edge detection [variation] is made

in luminance signal only and the resulting edge information is used to smooth both

luminance and color-difference information");

computing for each unit area of an image a rate of the smoothing of the

chromaticity and rate of smoothing of the luminosity according to variation as outputs to

chromaticity and luminosity noise removing section respectively (Mckinnon col. 14, lines

29-35, states "The same process is performed to both luminance and color difference

[chromaticity], edge detection is made in luminance and the resulting edge information

is used to smooth both luminance and color difference" and Mckinnon shows in figure

2, block 224 smoothing rate computing section [edge determining] which is outputted to

smoothing unit blocks 225, 228 and in col. 14, lines 34-40, states "the resulting edge

information is used to smooth both luminance and color-difference information. The

difference D between the weights of two neighboring pixel which determines the degree

of smoothing and the size of the neighboring area N [unit area] may be differently set,

with those for the luminance and color-difference" . This corresponds to computing for

each unit area [neighboring area] of an image a rate of the smoothing of the

chromaticity and rate of smoothing of the luminosity according to variation as outputs to

chromaticity and luminosity noise removing section respectively).

Mackinnon have shown separate luminosity and chromaticity data (Mckinnon, col.

14, lines 34-36, Mckinnon is processing luminance and color difference signal

[chromaticity]. Mckinnon however have not explicitly disclosed section for seprarating

image data into luminosity and chromaticity data.

In the same field of endeavor Sathe discloses section of seprarating image data into luminosity and chromaticity data (Sathe, in col. 7, lines 4-8, "processor receives image data in RGB space and the processor transform RGB to YUV color space by separating the image signal into luminance and chrominance". In the system of Sathe this corresponds to process of seprarating image data into luminosity and chromaticity data).

Therefore it would have been obvious to one having ordinary skill in the art at time the invention was made to separate image data into luminosity and chromaticity data from RGB image data as shown by Sathe in the system of Mckinnon because such a process provides reduction of noise of the original RGB image data by independently processing luminosity [intensity] and chromaticity [color] image data.

Allowable Subject Matter

6.   Claims 2-7, and 10-13, objected as being dependent on reject claim but would be allowable if rewritten in independent form including limitations of the base claim and any intervening claims.

Communication

7.   Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sherali Ishrat whose telephone number is 703-308-9589. The examiner can normally be reached on 8:00 AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Leo Boudreau can be reached on 703-305-4706. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).
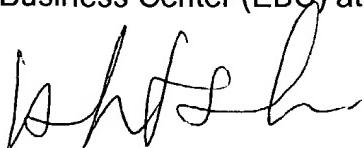
Ishrat Sherali

Patent Examiner

Art Unit 2621

October 22, 2004
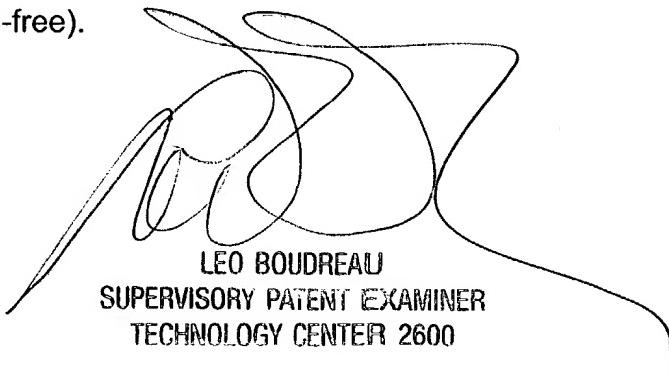
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